EXHIBIT “K”

Declaration of Wendi Goldsmith

Pursuant to 28 U.S.C. § 1746, I, Wendi Goldsmith, declare the following based upon my personal knowledge:

1. My name is Wendi Goldsmith. I am 51 years old and competent to testify to all facts contained in this declaration.

2. I have over twenty-seven years of experience applying earth science principles to sustainable and disaster resilient planning, development, and natural resource restoration, much of which involved critical infrastructure protection and sensitive facilities. I have led research and development programs for the U.S. Department of Defense, developing methods for evaluating and optimizing renewable energy and efficient/resilient buildings, infrastructure, and site design. I played a lead role on the planning, design, and program management of the $14 billion post-Katrina Hurricane Storm Damage Risk Reduction System, the first regional-scale climate adapted infrastructure system in the US and winner of top national awards from the American Society of Civil Engineers, the American Council of Engineering Companies, and others. I have also written and presented extensively on climate change resilience in urban settings, and frameworks for decision-making under risk and uncertainty, including book chapters, peer reviewed articles, reports, formal seminars for multiple public agencies and academic institutions including Harvard Graduate School of Design, Metropolitan Transit Authority of New York, U.S. Army Corps of Engineers, and more. Given this extensive experience, I have expertise in the practical application of climate science in the built environment.

3. I received a *Doctor in Philosophy (PhD)* in Climate Resilience Science, Engineering, Economics and Business from Aarhus University in Denmark in 2016. I received a *Master of Science* from the University of Massachusetts at Amherst in Plant and Soil Science in

2002 and a *Master of Arts* from the Conway School in Ecological Land Planning Design in 1990. I received dual *Bachelor of Arts* degrees from Yale University in Geology & Geophysics and Studies in the Environment in 1988. I am a Licensed Professional Geologist in New Hampshire and Louisiana, and a Certified Professional Geologist by the American Institute of Professional Geologists. I am a Certified Professional in Erosion and Sediment Control and a Certified Profession in Stormwater Quality by EnviroCert International.

4. In 1992, I founded Bioengineering Group, where I served as CEO until its sale in 2014. The mission of Bioengineering Group is to build sustainable communities on an ecological foundation. As CEO, I led the planning, permitting and design of large-scale infrastructure projects such as renewable energy generation, highways, stormwater management systems, flood control facilities, and parks/greenways, as well as contaminated properties, including Superfund sites. I also acted as an advisor for site development and infrastructure projects regarding sustainable development methods suitable to changing climate and land use patterns. Prior to founding Bioengineering Group, I was an Environmental Planner at Charles T. Main Inc. from 1990 to 1991, where I conducted site investigations, worked on project planning and design, and prepared permit applications for utility corridors, hazardous materials cleanup and restoration, and solid waste containment and revegetation. I then worked as a Fluvial Geomorphologist for Bestmann Igenieurbiologie GmbH in 1991, performing ecological restorations of rivers, streams, wetlands, coastal areas, and reservoirs in Germany.

5. I have worked on disaster resilience infrastructure projects across and outside the country for a diverse range of clients. A few examples include:

- Following Hurricane Sandy, I was selected to review climate science and geomorphology best practices in relation to disaster recovery and resilient

infrastructure improvements for LaGuardia Airport in New York, New York for two terminals operated by Delta Airlines. The project aimed to examine vulnerabilities and risks, identify appropriate mitigation measures and costs, and implement solutions that incorporated green infrastructure measures.

- When a cluster of hurricanes affected the Gulf of Mexico shortly after commencement of engineering for the Panama Canal Expansion Project, I was tapped by the design team to lead an interdisciplinary review to ensure use of global best practices for engineering with regard to climate change and disaster resilience. Under my guidance, the team identified several deficiencies which generally related to failure to address threats and vulnerabilities due to combined events, cascading cause-effect processes, and known forecasts of environmental conditions anticipated during the project's service life. Specific recommendations were made to address improvements of the design to remedy these deficiencies.
- I led the Federal Reserve Bank Climate Risk Study in Boston, Massachusetts, which evaluated the risk from sea level rise and storm surge to its property in downtown Boston. The main gap in then-current understanding of facility vulnerability was the high potential for existing stormwater infrastructure to operate in reverse (bringing water into the site, rather than conveying it away) or to entirely rupture/collapse due to age and degraded condition during combined heavy rainfalls and high water levels in Boston Harbor. Study recommendations included increasing resilience through redundant measures including the construction of a stormwater "barricade" system, as well as modification/relocation of the facility's existing mechanical systems.

- I integrated climate science into New Orleans' Hurricane and Storm Damage Risk Reduction System (HSDRRS) in Louisiana, a monumental undertaking to reduce flood vulnerability using multiple lines of defense surrounding New Orleans and its neighboring Parishes. Started in 2006, the project is the nation's first infrastructure system accounting for climate change adaptation and resilience, and it resulted in approximately $30 billion in prevented damages during Hurricane Isaac in 2006. Unlike the multi-billion-dollar set of infrastructure elements before Katrina, the rapidly planned, designed, and constructed HSDRRS did not rely merely on hindward-looking data as the basis of design. Instead, it systematically defined and applied known trends in sea level rise, local land subsidence rates, and storm patterns (rainfall, wind speed, wind field size, and more) to encompass predicted future conditions throughout the intended service life of the project. The project resulted in adoption of new protocols for multi-parameter forecast-based engineering guidance by the US Army Corps of Engineers, effectively setting the standard in the US for such work.
- I led an Energy Quality Flow Analysis for Ultra-Low Communities for multiple Army installations seeking to reduce their vulnerability to loss of operations, while simultaneously improving their greenhouse gas footprint and reducing operating costs throughout facility life. Threats include changing climate conditions capable of shifting technical requirements and posing operational interruptions, as well as potential military contingency and terrorist incidents. The project identified cost-effective and risk-resilient energy choices, focusing on thermal energy through combined wastewater, district heating/cooling, and on-site renewables.

- I led a Disaster Resilient Infrastructure Training Program for the Metropolitan Transportation Authority/New York City Transit to address recovery, disaster resilience and climate change factors following Hurricane Sandy. I ultimately researched and updated design team managers regarding global best practices for tunnel and rail flood mitigation, and recommended suitable climate change factors to guide design. The information aided the management team to identify specific deficits and feasible remedies to better coordinate multiple repairs and new construction elements in and around the New York City Subway System after it sustained billions in damages from Hurricane Sandy.

6. Outside of my career, I have dedicated myself to public service. In 1999, I co-founded the Center for Urban Watershed Renewal, a non-profit organization revitalizing the ecological, economic and social value of degraded urban sites. I have been a Board Director for the Center since its founding and currently serve as President. From 2008 to 2012, I served as a federal appointee to the National Women's Business Council. I have been on the International Council of Advisors for the Asian University of Women since 2010. Since 2014 I have served as Board Director for the Soil and Water Conservation Society, where I remain an active member. I am also a Fellow and lifetime member of the Society of American Military Engineers. In 2016, the American Association of Engineering Societies and National Audubon Society awarded me the Joan Hodges Queneau Palladium Medal. I am also a 2012 recipient of the Bronze Order of the De Fleury Medal for inspirational leadership to the Army Engineer Regiment.

7. I am familiar with the case, *Conservation Law Foundation, Inc. v. ExxonMobil Corporation et al.,* 16-cv-11950, and have read both the plaintiff's complaint, filed on September

29, 2016, and the defendant's motion to dismiss and memorandum of law in support, filed on December 6, 2016.

8. With regard to claims that CLF and its members lack standing suitable for the case, the defendants appear to lack knowledge of existing patterns of public use and access within walking and boating reach of the ExxonMobil facility; these patterns are also reflected in the use and interests of CLF members. While the number of greenway corridors and waterfront access was once limited to the area a short distance away above the Mystic River Locks, for many decades the pattern of broad public use and access has changed. For instance, several popular sites for public waterfront use and boating/fishing access exist well within a mile radius from the tank farms subject to the suit. Several hundred feet to the East is Mary O'Malley State Park, bordering Island End River, the Mystic River, and the Admirals Hill development of the former Navy Yard, and hosting multiple forms of waterfront access, including piers and small craft launch areas, plus active/passive recreation facilities. Directly across the Mystic River from the tank farm is Ryan Playground where families routinely fish and interface with the Mystic River. Roughly 1500 feet to the West of the tank farm is Draw Seven State Park which is a much-loved canoe/kayak put-in place informally used as a dog park and featuring a less manicured and more rustic set of paths and waterfront access points, as well as a formal pier. Within the radius of one mile (well inside the zone of potential exposure pathways for contaminants escaping the tank farm), other notable waterfront facilities are used by the general public, often by small watercraft. The list is extensive, but includes the National Park Service Historical Park and Museum where the USS Constitution docks; Condor Street Urban Wild and related converted brownfield park sites owned by Boston Conservation Commission; Little Mystic Access Area on Terminal St. and the nearby Barry Playground; DCR parks along Mystic River Rd. fronting the Mystic and Malden Rivers;

Wellington Greenway and River Path; and Constitution Beach, among others. I have personally kayaked around the area and serve as Board Director for CUWR.org which submitted a proposal to provide improved coastal resilience through wetland restoration and stormwater management on a nearby site on Condor St. owned by Boston Redevelopment Authority, and which was formerly occupied by a different tank farm on Chelsea Creek/River. During the planning studies and field reconnaissance phase, I established extensive knowledge of local/regional petrochemical facility land use history as well as neighborhood level stakeholder groups and individual residents. Concerns about current vulnerability to future spills and other types of facility accidents is well understood, based on past incidents at the ExxonMobil tank farm, other similar facilities, older and more recent studies and maps identifying low-lying areas and other susceptible places, and also many stepped-up policies and practices in the greater Boston area and nation as a whole geared to better anticipating foreseeable impacts and preparing to avoid losses which pose real risk today widely understood to worsen in the future.

9. Several of the Defendant's claims, notably that the halfmoon pond-size water body is manmade, are false, with numerous maps, surveys, and aerial photos clearly indicating that prior to being filled for industrial use, the majority of the site and surrounding terrain consisted of intertidal landforms, mainly marshes and mudflats. For instance, the 1903 USGS topographic quadrangle depicting Boston Massachusetts and contiguous lands clearly displays the origins of road network development near the site, while documenting continued marshlands and intertidal channels existing where the halfmoon pond now remains as a remnant of past natural waterways which categorically are inherently classified as navigable under federal statute, and also as subject to Massachusetts Chapter 91 licensing under state statute.

10. It is entirely possible for the Court to grant relief that would remedy the harms suffered by CLF members. Specifically, the court could fashion relief that addresses ExxonMobil's apparent deficits in design criteria, assumptions about trends and combined effects contributing to failure, and other factors resulting in lack of climate change preparedness at its Everett Facility. In my professional experience, I have been called upon to perform and guide similar assignments, as have other government and private sector entities and their contractors. Within Massachusetts and within Federal government, notably the US Army Corps of Engineers, procedures and actions have become increasingly common to reassess, identify, and remedy deficiencies in project design and implementation, now that scientific consensus and relevant government policy is clear about how natural disaster impacts influenced by climate change poses substantial (and increasing) threats to public and private assets as well as public health and safety and the environmental.

11. The Defendant's attempts to characterize the Plaintiffs concerns as dependent upon theoretical, distant, and improbable scenarios fall flat. Known trends in changing rainfall intensity are well explained by climate change models, but they are not "speculative." Rather, they are based on observations of historic events. First, in Massachusetts and the local region there have already been numerous events which are officially recognized as being part of a pattern of extreme weather conditions affected by climate change processes. One of these is the intense storm of 10 July 2010 that already caused discharge of pollutants from the tank farm. The US Geological Survey, National Oceanographic and Atmospheric Administration, Northeast Climate Science Center, and others haves published findings based on updated statistical methodologies that recent decades of rainfall patterns show a peak 24-hour rainfall intensity which is on the order of 75% higher than prior decades, in essence documenting that rainfall volumes experienced today are already almost twice what they were understood to be in the past, due to climate change. Second, while the

Defendant offers no scientific basis for substantiating the claim that the Everett tank farm facility is unlikely to face any true threat, they specifically neglect to account for major shifts in scientific understanding related to many types of change affecting complex and interdependent natural/built systems where human land use patterns and other impacts inherently alter and shift patterns and processes due to a wide range of factors. These concepts are broader than climate change, *per se*, and reflect what many have characterized as a major scientific revolution in which responsible analysis must include more than a cursory assessment of limited or selective data from the past, but instead must account for risk and uncertainty connected with future conditions which broadly cannot be assumed to resemble historic records, and often are understood through models and forecasts. The highly-cited paper published in Science – Climate Change, "Stationarity Is Dead: Whither Water Management?" (Milly, et al. 2008), provides an accessible treatment of this important topic, and is considered by many professionals to mark a wholesale shift in practice standards related to water resources planning and engineering.

12. Sea Level Rise in the distant future is not the only factor CLF is considering as it views risk in the near and long terms. Rather, sea level rise combined with storm surge and also wave height additively are capable of contributing to water surface elevations which can cause overtopping, erosion, and other damaging impacts to the ExxonMobil tank farm. Sea level rise is not necessarily a distant "theoretical" possibility, but rather a potentially sudden, though short-lived, effect which periodically occurs due to ephemeral shifts in ocean currents which "stall" water flows along the Atlantic US coast, causing it to "back up" at higher elevations. The Miami FL area has experienced several such incidents which caused water surfaces to be 1.5 feet higher than predicted. Due to the low-lying and porous local terrain, these short-lived unpredicted floods placed salt water in contact with pumps and other equipment normally shut down in time to prevent

salinity exposure. The costly damage to the equipment affects short- and long-term operability. Throughout the North Atlantic coastline, similar incidents have occurred, though they are frequently difficult for observers to distinguish from variations due to lunar and wind field effects. This type of effect in the Atlantic Meridional Overturning Circulation (AMOC) flows is understood to become more variabile due to several climate change factors, and currently influences water surface elevations up to three feet or more, possibly more in the future under specific circumstances.

13. The combined effects of sea level rise and intensified precipitation patterns, plus erosion and geomorphic shifts in the nearby coastal and riverine corridors, has the potential to affect the ExxonMobil tank farm in multiple ways it does not appear prepared for. Furthermore, the man-made drainage systems on- and off-site have experienced periodic failures due to a range of effects including backwater due to inundated outlets; sedimentation with road sand, eroded soils, and other organic and inorganic particles; clogging with floatable debris such as flotsam carried by marine or riverine overbank flows and urban floatables including bags, jugs, bottles, bins, and other items able to block inlets and pipes.

14. The defendant's claim that the CWA "permit shield" protections to applicants provides relief from liability is hollow. The issue here is not whether there is any change in regulations which would affect permitting standards the defendant is responsible to adhere to. Nor is it the fact that CLF did not address these points during the NPDES permit public comment period. The issue is that information has come to light, including information ExxonMobil had in its possession (as did its key contractors on the project), which indicates failure to adhere to the then-current as well as now-current standards of care regarding addressing known change factors affecting the Everett location in particular. There is no evidence ExxonMobil has addressed the

design criteria appropriate for critical infrastructure protection in an area subject to coastal storm damage, yet evidence has emerged that the defendant and its contractors possessed information related to knowing the threat. Furthermore, the defendant's contractors have themselves applied, and in some cases also contributed to the development of, the very standards which have been adopted by multiple federal agencies. The 2006 HSDRRS design criteria were well known to Shaw, for instance.

15. Hurricanes Katrina, Rita, and Sandy caused substantial impacts to coastal industrial facilities, with ensuing spread of contaminants, as well as damage to the facilities themselves which interrupted critical industrial supplies (such as fuel for cars, trucks, and back-up generators). The U.S. Army Corps of Engineers was tasked through Federal Law 113-2, Chapter 4, to complete a report detailing the results of a two-year study to address coastal storm and flood risk to vulnerable populations, property, ecosystems, and infrastructure affected by Hurricane Sandy in the United States' North Atlantic region from Virginia through New Hampshire, with an eye towards spotting gaps between how projects were designed in their time, versus what is commonly understood today to be an adequate standard. Known as the North Atlantic Coast Comprehensive Study, it was intended to help local communities better understand the issue of changing flood risks associated with climate change, and to equip them with tools to help prepare for future flood risks. It builds on lessons learned from Hurricane Sandy and attempts to summarize and synthesize the latest scientific information available for state, local, and tribal planners. The conclusions of the study, as detailed in the final report, include several findings, outcomes, and opportunities, such as the use of a nine-step Coastal Storm Risk Management Framework that can be customized for any coastal watershed. I have not discussed the implications of the North Atlantic Coast

Comprehensive Study with any government or private sector practicing professional who does not regard it as an excellent encapsulation of current standards of "good engineering practices."

16. In my opinion based on extensive professional work in this domain, plus familiarity with other standards and practices by others, the "good engineering practices" standard applicable to the Everett Terminal includes consideration of climate change impacts, and indeed other pertinent new information potentially affecting the facility. Claiming that EPA does not require climate change to be considered during or after a permit is issues implies that EPA does not require any type of known change to data to be considered, which is patently false. Similarly, much sea level rise in New England is attributed to geostatic rebound effects of bedrock in the coastal zone, something which has been documented to have been occurring for roughly 10,000 years. The US Army Corps of Engineers first published its engineering recommendations based on past and forecast sea level rise (driven by land subsidence) in 1992 and at the time did not use a methodology which in any way accounted for climate change, merely historic data and known geologic phenomena. Hence, to properly address and account for changes in sea level and storm intensity is neither speculative, nor a distant future improbable point of concern.

17. While the EPA may not currently have published tools related to accounting for climate change and other phenomena such as geostatic rebound which affect relative sea level rise, other more appropriate Federal agencies do. The nation's preeminent engineering organization, the US Army Corps of Engineers, first published sea level rise guidance for designers in 1992, and then made wholesale upgrades to the sophistication and comprehensiveness of their approach in response to Hurricane Katrina during their effort to construct a coastal flood infrastructure system designed to avoid similar future impacts. Part of their protocol includes planned regular updates to their methodology and data as science and policy continue to develop. The nation's single largest

public works infrastructure investment, the $14 billion greater New Orleans HSDRRS, used the USACE protocol and applied these principles, as have numerous other USACE and non-USACE public and private projects initiated since 2006. I personally interfaced extensively with USACE personnel and engineering staff from ARCADIS, Shaw, TetraTech, and other firms during the conduct of planning, design, and construction management for the HSDRRS program, and can attest to the broad and pragmatic familiarity with the principles and procedures to address predicted future conditions, including those stemming from climate change. After Hurricane Sandy affected the North Atlantic region, it became a federal priority to ensure that past infrastructure investments were systematically managed in a way that adequately accounted for new information corresponding to design performance and failure risks.

18. Based on the aforementioned observations that the Everett Terminal is already experiencing climate change impacts, with or without future climate change factors, it is increasingly susceptible to being inundated during a severe storm. Because of this apparently inadequately addressed risk, the court should grant injunctive relief requiring ExxonMobil to assess the vulnerabilities of the Everett Terminal in light of climate change, develop engineering design plans to adequately address those vulnerabilities, and ultimately implement measures that will protect Everett and other surrounding communities from contamination from this Terminal. Many engineering organizations have been on record in broad and specific ways to include the need to address climate change effects when addressing natural hazard mitigation and facility design. The list of US and international professional organizations adopting, refining, and promulgating guidance on the issue grows steadily. The Engineering Standard of Care doctrine includes various considerations such as applying higher levels of certainty and lower degrees of risk when addressing human health and safety, as opposed to matters of nuisance or preference.

Identifying which data set to use when determining rainfall amounts for hydrologic calculations is part of the engineering process, and there is not one method, but rather an expectation that professionals will use adequately conservative sets of information, including publicly available updates or identifications of known data gaps or shortfalls. In addition to responding to those public interests required by its current permits (which in my professional opinion ExxonMobil has not adequately addressed for permit compliance) I note that there appear to be problems related to self-interest regarding asset preservation and continuity of operations due to unattended-to coastal vulnerabilities. Hence the concerns CLF has raised are not only affecting the community, the receiving waters, and CLF's members, but also ExxonMobil shareholder interests. It raises the question of whether potential liabilities have been diligently characterized and properly disclosed in financial statements, shareholder reporting, and other documents beyond the current permit related suit.

I swear, under penalty of perjury, that the foregoing is true and correct to the best of my knowledge.

Executed on December 19, 2016

Wendi Goldsmith, PhD